

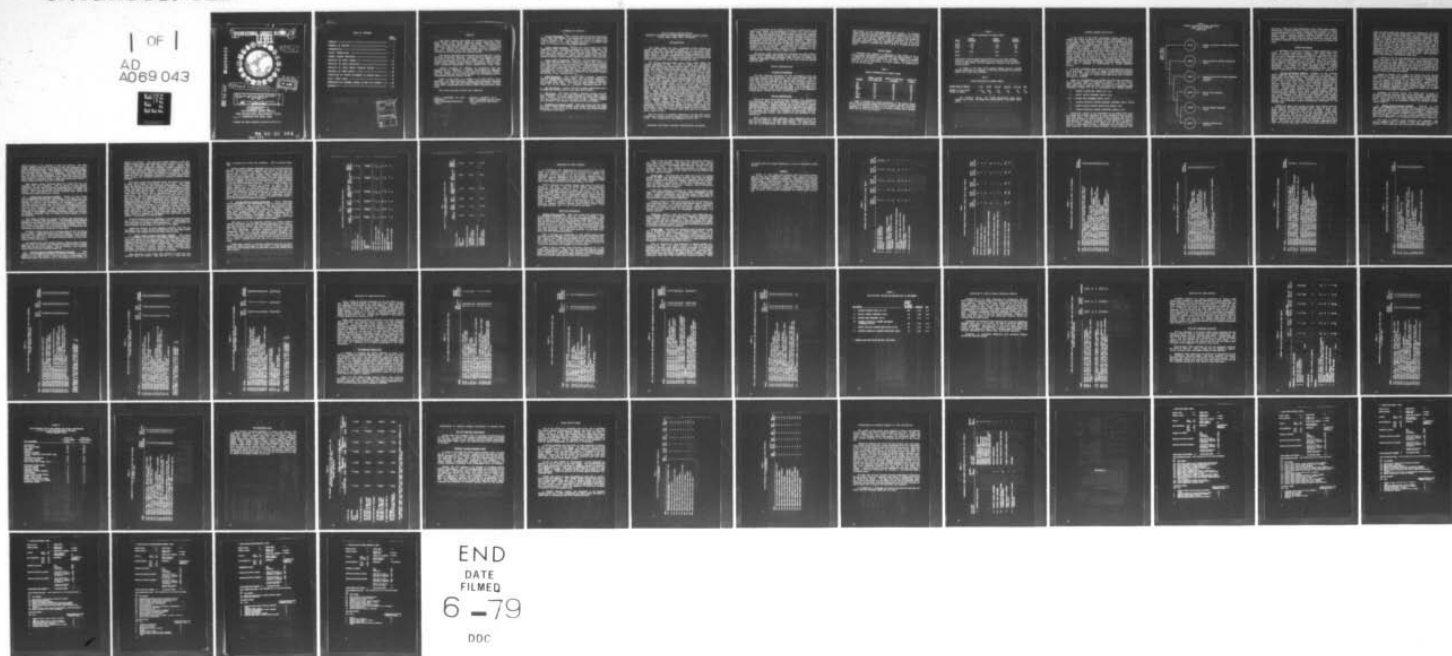
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AIR FORCE OCCUPATIONAL MEASUREMENT CENTER RANDOLPH AFB TX F/6 5/9  
AIRCRAFT ELECTRICAL SYSTEMS MAINTENANCE CAREER LADDER. AFSCS 42--ETC(U)  
JAN 79 F C GENTNER

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# 9 OCCUPATIONAL SURVEY REPORT, LEVEL 12



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6 AIRCRAFT ELECTRICAL SYSTEMS MAINTENANCE  
CAREER LADDER,  
AFSCs 42330, 42350, 42370, and 42399

11 AFPT 90-423-349  
JANUARY 1979

OCCUPATIONAL SURVEY BRANCH  
USAF OCCUPATIONAL MEASUREMENT CENTER  
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ACCESSION for

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## PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Aircraft Electrical Systems Maintenance career ladder (AFSCs 42330, 42350, 42370, and 42399). This project was directed by USAF Program Technical Training, Volume 2, dated October 1977. The authority for conducting specialty surveys is contained in AFR 35-2. Computer outs from which this report was produced are available for use by operating and training officials.

This survey instrument was developed by Lieutenant Ann L. Pont, Inventory Development Specialist. Captain Frank C. Gentner, analyzed the survey data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Randolph AFB, Texas, 78148.

Computer programs for analyzing the occupational data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Copies of this report are available to air staff sections, major commands, and other interested training and management personnel upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Randolph AFB, Texas 78148.

This report has been reviewed and is approved.

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## SUMMARY OF RESULTS

1. Survey Methodology: The Aircraft Electrical Systems Maintenance career ladder job inventory was administered during the period April through September 1978. Survey results are based on responses from 2,064 incumbents of the 2,865 assigned personnel in the 423X0 career ladder or 72 percent of all career ladder members.
2. Career Ladder Structure: Overall this career ladder was highly homogeneous, with 77 percent performing as aircraft electricians. Six major job clusters were identified within the career ladder: aircraft electricians (the largest group, which included first-job through first-line supervisory personnel); quality control, battery shop, and management personnel; combat logistics support specialists; and instructors.
3. Career Ladder Progression: Generally, jobs performed by 3-, 5-, and 7-skill level personnel were technical in nature, with 7-skill level respondents spending only 25 percent of their time performing management, supervision, and training functions. Technical tasks performed by 7-skill level respondents, however, did include the more difficult troubleshooting and the inspection tasks, which were indicative of a supervisory role. The 9-skill level incumbents were primarily managers who did few, if any, technical tasks.
4. AFMS Differences: First through third enlistment respondents primarily accomplished technical tasks. With the fourth enlistment, a trend of spending larger amounts of time on supervision, management, and training tasks began. Not until the sixth enlistment (20 years AFMS) did the job change to a primarily management-oriented one.
5. AFR 39-1 Review: Overall, AFR 39-1 specialty descriptions gave a thorough and accurate picture of the 423X0 career ladder.
6. STS Review: STS 423X0 provided a generally accurate and complete description of the job tasks performed by career ladder respondents. However, the match between the STS and survey data indicated that some refinements to the STS could be made. Computer products were furnished to the technical training school for this purpose.
7. Comparison to Previous Survey: Both this survey and the earlier 1974 survey reflect highly similar career ladder structures and tasks performed. A contrast of the data from the two time periods indicated a very stable career ladder.

SUMMARY OF RESULTS

**OCCUPATIONAL SURVEY REPORT  
AIRCRAFT ELECTRICAL SYSTEMS MAINTENANCE CAREER LADDER  
(AFSCs 42330, 42350, 42370, AND 42399)**

**INTRODUCTION**

The United States Air Force occupational survey program has existed since 1956 when initial research by the Air Force Human Resources Laboratory developed the methodology for conducting occupational surveys. By 1967, an operational survey program was established within Air Training Command which produced 12 enlisted career ladder surveys annually. In 1972 the occupational survey program was expanded to produce 51 career ladder surveys each year.

The Aircraft Electrical Repair career ladder (AFSC 423X0) was initially established in 1954. In 1959, the ladder was expanded to include both aircraft and missile electrical repair, which remained combined until these functions were split in 1961. On 30 April 1976, the ladder was retitled, Aircraft Electrical Systems Maintenance, the title which it has retained to this day. The 9-skill level of this career ladder has encountered additional changes throughout its Air Force history. Originally (in 1954), the Aircraft Electrical Superintendent and Aircraft and Missile Electrical superintendent (in 1959) jobs were given AFSC 42380. In 1960, the Aircraft and Missile Electrical Superintendent job was renumbered 42390, and in 1961, the missile function was converted to another AFSC. On 30 April 1976, the 9-skill level was combined with other aircraft maintenance career ladder superintendents into AFSC 42396, Aircraft Accessory Superintendent. On 30 April 1977, the Aircraft Accessory Superintendent AFSC was changed to 42399. Today, these 42399 personnel superintend work in six career ladders: 423X0 (Aircraft Electrical Systems Maintenance), 423X1 (Aircraft Environmental Systems), 423X2 (Aircraft Egress Systems), 423X3 (Aircraft Fuel Systems), 423X4 (Aircraft Pneudraulic Systems), and 423X5 (Aerospace Ground Equipment). In October 1978, the Chief Enlisted Manager (CEM) code, Aircraft Maintenance Manager, was created. These managers supervise work in the 423XX, Aircraft Accessory Systems Maintenance; 426XX, Aircraft Population Systems Maintenance; and 431XX, Aircraft Maintenance career areas. Except for the changes in the 9-skill level, and the creation of the CEM code, the 423X0 career ladder has remained stable since the last occupational survey report in 1974.

With the advent of electronic components, the May 1974 survey recommended including electronic training in the basic technical training course. This recommendation was implemented late in 1974.

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An Occupational Survey Report of Electronic Principles used in the 423X0 career ladder was accomplished in October 1977 (AFPT 90-423-222). This report presented a detailed listing of electronic principles used by 42350 incumbents stationed at various locations and commands. Electronic concepts used by larger percentages of 42350 airmen in the survey sample included power supplies, relays, soldering, transformers, multimeters, direct current and voltage, and resistance. Solid state special purpose devices were used or referred to by a maximum of only 46 percent of the survey sample. Transistors were worked with by a maximum of only 26 percent. Detailed computer products were furnished to the technical training school for a closer examination of relevant electronic concepts to train in 423X0 courses.

The present survey was conducted to determine the career ladder's stability and to gather the percent of time spent on solid state electronics versus conventional electrical tasks in order to validate the additional electronics training added to the basic technical training course in 1974.

## **SURVEY METHODOLOGY**

### **Inventory Development**

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-423-349. The survey instrument from the 1974 study served as the basis for the new task inventory. The previous task list was expanded and refined after thorough research of career field publications and directives and after personal interviews with 27 subject-matter specialists at nine bases. The final result was a task list consisting of 559 tasks grouped under 11 duty headings and a background section which included information about each respondent such as grade, TAFMS, duty title, and job interest.

### **Survey Administration**

During the period April 1978 through September 1978, consolidated base personnel offices in operational units worldwide administered the inventory booklets to personnel holding the Aircraft Electrical Systems Maintenance DAFSCs. These personnel were selected from a computer generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL). Each individual who completed the inventory first completed an identification and biographical information section, then checked each task performed in their current job.

After checking all tasks performed, each respondent then rated each of these tasks on a nine-point scale showing relative time spent on that task as compared to all other tasks checked. The ratings ranged from one (very-small-amount time spent) through five (about-average

time spent) to nine (very-large amount time spent). To determine relative time spent for each task checked by a respondent, all a respondent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task responses and the quotient multiplied by 100. This procedure provides a basis for comparing tasks not only in terms of percent members performing but also in terms of average percent time spent.

### Survey Sample

Personnel were selected to participate in this survey so as to insure proper representation across MAJCOM and DAFSC groups. Table 1 reflects the percentage distribution, by major command, of assigned personnel in the career ladder as of June 1978. Also listed in this table is the percent distribution, by major command, of respondents in the final survey sample.

TABLE 1

#### COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	NUMBER ASSIGNED AS OF JUNE 1978	PERCENT OF PERSONNEL ASSIGNED	PERCENT OF SAMPLE
SAC	699	24%	26%
TAC	697	24%	23%
MAC	537	19%	19%
USAFE	313	11%	10%
ATC	202	7%	7%
ADC	116	4%	4%
PACAF	111	4%	4%
AFLC	104	4%	4%
OTHER	97	3%	3%

Table 2 indicates the DAFSC distribution of the survey sample. The 2,064 respondents making up this final sample represent 72 percent of the 2,865 personnel assigned to this career ladder Air Force-wide. Generally, it appears that the survey sample provides good representation from all skill level DAFSCs.



TABLE 2

## DAFSC DISTRIBUTION OF SURVEY SAMPLE

<u>DAFSC</u>	<u>NUMBER ASSIGNED</u>	<u>NUMBER SAMPLED</u>	<u>PERCENT SAMPLED</u>
42330	369	211	57%
42350	1,749	1,279	73%
42370	747	574	77%
<b>TOTAL</b>	<b>2,865</b>	<b>2,064</b>	<b>72%</b>
42399	*	126	*

\*Nine-skill level personnel superintend work in six career ladders; therefore, specific authorizations are not available for each ladder. Of 460 assigned 42399s, 126 were sampled who indicated they supervised 423X0 personnel.

In Table 3, the total active federal military service (TAFMS) survey distribution is presented. Notice that 52 percent of the survey sample are in their first enlistment.

TABLE 3

## TAFMS DISTRIBUTION OF SURVEY SAMPLE

<u>MONTHS TIME IN SERVICE</u>	<u>1-48</u>	<u>49-96</u>	<u>97-144</u>	<u>145-192</u>	<u>193-240</u>	<u>240+</u>
<b>NUMBER IN FINAL SAMPLE</b>	<b>1,161</b>	<b>365</b>	<b>252</b>	<b>116</b>	<b>194</b>	<b>143</b>
<b>PERCENT OF SAMPLE</b>	<b>52%</b>	<b>16%</b>	<b>11%</b>	<b>5%</b>	<b>9%</b>	<b>6%</b>

The Command, DAFSC, and TAFMS distributions listed above indicate that overall, this sample was representative of the 423X0 career ladder.

Thirty-four percent of the respondents in the sample were found to perform jobs roughly equivalent to those described in the six clusters listed above. The remaining six percent performed jobs different from those described in the six clusters. These remaining jobs were so heterogeneous that they did not group with the clusters or as independent job types. Examples of job titles given by the remaining six percent of respondents include: maintenance job controller, trainee, shift supervisor, electrical systems evaluator, in-shop technician, and

## CAREER LADDER STRUCTURE

A key aspect of the USAF occupational analysis program is to examine the actual structure of career ladders--what people are doing in the field, rather than how official career field documents say they are organized. This analysis is made possible by the Comprehensive Occupational Data Analysis Programs (CODAP). CODAP consists of 40 programs which generate a number of statistical products used in the analysis of career ladders. The primary product used to analyze career ladders is a hierarchical clustering of all jobs based on the similarity of tasks performed and relative time spent. This process permits identification of the major types of work being performed in the occupation (career ladder) and is analyzed in terms of the job description and background data of each type of job. This information is then used to examine the accuracy and completeness of present career ladder documents (AFR 39-1 specialty descriptions, specialty training standards, etc.) and to formulate an understanding of current utilization patterns.

The basic identifying group used in the hierarchical job structure is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing these tasks. A Cluster is a group of job types which have a substantial degree of similarity.

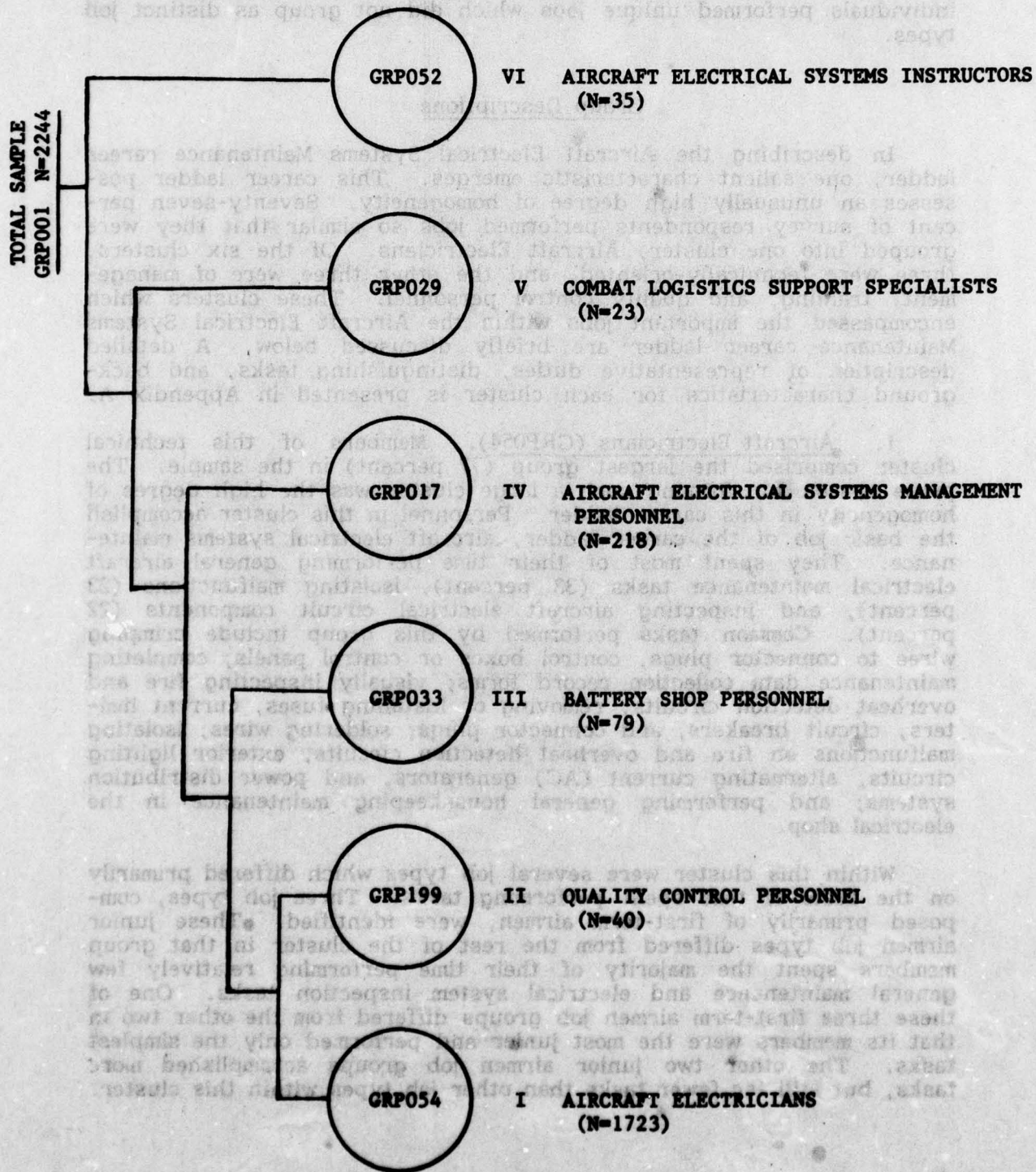
Based on task similarity, the division of actual jobs performed in the 423X0 career ladder is illustrated in Figure 1. The six clusters which constitute this career ladder structure are listed below. The GRP number shown beside each title is a reference to computer printed information included for use by classification and training officials.

- I. AIRCRAFT ELECTRICIANS (GRP054, N=1,723)
- II. QUALITY CONTROL PERSONNEL (GRP199, N=40)
- III. BATTERY SHOP PERSONNEL (GRP033, N=79)
- IV. AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL (GRP017, N=218)
- V. COMBAT LOGISTICS SUPPORT SPECIALISTS (GRP029, N=23)
- VI. AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS (GRP052, N=35)

Ninety-four percent of the respondents in the sample were found to perform jobs roughly equivalent to those described in the six clusters listed above. The remaining six percent performed jobs different from those described in the six clusters. These remaining jobs were so heterogeneous that they did not group with the clusters or as independent job types. Examples of job titles given by the remaining six percent of respondents include: maintenance job controller, trainee, shift supervisor, electrical systems evaluator, in-shop repairman, AGE



**FIGURE 1**  
**AIRCRAFT ELECTRICAL SYSTEMS MAINTENANCE**  
**CAREER LADDER STRUCTURE**  
**AFSC 423X0**



electrician, POMO crew chief, depot-level worker, PMEL supply monitor, branch chief, training specialist, training scheduler/ monitor, AF mobility program monitor, T.O. monitor, assistant first sergeant, unit career advisor, NCOIC production analysis, command equipment office, and AF Reserve advisor. Although some of these titles appear to be the same as those used to describe personnel falling within the clusters, these individuals performed unique jobs which did not group as distinct job types.

### Group Descriptions

In describing the Aircraft Electrical Systems Maintenance career ladder, one salient characteristic emerges. This career ladder possesses an unusually high degree of homogeneity. Seventy-seven percent of survey respondents performed jobs so similar that they were grouped into one cluster, Aircraft Electricians. Of the six clusters, three were technically-oriented, and the other three were of management, training, and quality control personnel. These clusters which encompassed the important jobs within the Aircraft Electrical Systems Maintenance career ladder are briefly discussed below. A detailed description of representative duties, distinguishing tasks, and background characteristics for each cluster is presented in Appendix A.

1. Aircraft Electricians (GRP054). Members of this technical cluster comprised the largest group (77 percent) in the sample. The prime reason for forming such a large cluster was the high degree of homogeneity in this career ladder. Personnel in this cluster accomplish the basic job of the career ladder, aircraft electrical systems maintenance. They spent most of their time performing general aircraft electrical maintenance tasks (33 percent), isolating malfunctions (23 percent), and inspecting aircraft electrical circuit components (22 percent). Common tasks performed by this group include crimping wires to connector plugs, control boxes or control panels; completing maintenance data collection record forms; visually inspecting fire and overheat detection circuits; removing or installing fuses, current limiters, circuit breakers, and connector plugs; soldering wires; isolating malfunctions on fire and overheat detection circuits, exterior lighting circuits, alternating current (AC) generators, and power distribution systems; and performing general housekeeping maintenance in the electrical shop.

Within this cluster were several job types which differed primarily on the basis of time spent performing tasks. Three job types, composed primarily of first-term airmen, were identified. These junior airmen job types differed from the rest of the cluster in that group members spent the majority of their time performing relatively few general maintenance and electrical system inspection tasks. One of these three first-term airmen job groups differed from the other two in that its members were the most junior and performed only the simplest tasks. The other two junior airmen job groups accomplished more tasks, but still far fewer tasks than other job types within this cluster.



Other job types within this cluster included troubleshooters, who spent most of their time isolating malfunctions, and experienced electricians who, as more senior 5- and 7-skill level personnel, performed a large number of technical tasks such as bench checking, preparing forms, records, or reports, and directing and implementing tasks. Also within this cluster, two groups of first-line supervisors were identified. They spent the majority of their time performing technical tasks such as inspecting aircraft electrical circuit components and isolating malfunctions, but in addition, spent approximately 25 percent of their time on supervisory tasks. These supervisory groups differed from each other primarily on the basis of time spent on technical tasks. Both groups of supervisors wrote in essentially the same job titles: shift supervisor, NCOIC electrical shop, and assistant shop chief.

In addition to the job types described above, a further subdivision within this cluster can be made by aircraft. Most technicians in this cluster grouped as either fighter or large aircraft electricians, and within these groups small differences by type of aircraft were noted. But since most Aircraft Electricians were involved in maintenance of electrical circuits and systems that were common to all aircraft, the job of the Aircraft Electrician was virtually the same regardless of the aircraft to which he or she was assigned.

Looking at Cluster I as a whole, one notices that most Aircraft Electricians are in their first enlistment (58 percent), with an average grade of E-4. Twenty-four percent of this cluster are stationed overseas, the highest percentage of any 423X0 cluster. Approximately one-third supervise an average of four subordinates. Members of this group also perform the highest average number of tasks of any cluster. Other demographic comparisons across functional groups can be made using the selected background data contained in Table 4 or the more extensive job descriptions in Appendix A.

Examining job interest indices, one notices that 70 percent of Aircraft Electricians indicated their job was interesting. Approximately 80 percent felt their job used their talents and training fairly well or better, which was one of the higher ratings among functional groups. (For a comparison of job satisfaction indices by functional groups, consult Table 5.)

II. Quality Control Personnel (GRP199). Personnel in this cluster were distinguished by the fact that they spent the majority of their time inspecting aircraft electrical circuit components (64 percent) and performing quality control functions (12 percent). Common tasks performed by group members included visually inspecting aircraft AC power distribution circuits, fire and overheat detection circuits, anti-skid circuit components, and transformer-rectifier circuit components.

Two types of Quality Control Personnel were identified. One group's members spent 87 percent of their time inspecting aircraft electrical circuit components and seven percent performing quality

control functions to the exclusion of other job functions. The other groups' members spent only 52 percent of their time inspecting and 17 percent performing quality control functions, along with other management and supervisory tasks. The members of both groups called themselves quality control inspectors or evaluators. Also within this cluster, four field training detachment (FTD) instructors were identified. While not quality control personnel as such, their job involved a sufficient number of inspection tasks to make them appear more similar to quality control personnel than other instructors.

Most Quality Control Personnel held the 7-skill level and had completed their first enlistment. Only 23 percent of them directly supervised. Quality Control Personnel expressed one of the higher job interest ratings and the highest perceived utilization of talents and training, with approximately 90 percent indicating their talents and training were utilized fairly well or better.

III. Battery Shop Personnel (GRP033). Airmen in this cluster were distinguished by both their duty location in the battery shop, and the fact they spent the largest amount of time of any cluster on bench checking (3 percent) and maintaining test equipment (11 percent). Fifty-four percent of their time was spent on performing general aircraft electrical maintenance tasks, and 11 percent on inspecting aircraft electrical circuit components. Tasks frequently performed by Battery Shop Personnel included visually inspecting, cleaning, servicing, assembling or disassembling, performing capacitance tests, and removing or installing connectors, cells, or straps on nickel-cadmium or silver zinc batteries.

This cluster included two groups of battery shop specialists and one group of battery shop supervisors. The specialist groups differed primarily on the amount of time they spent bench checking components. The battery shop supervisors' job was primarily technical, but it differed from the specialist's job in the higher amount of supervision and maintaining test equipment performed by supervisors.

Personnel in this cluster had an average grade of E-3, the lowest of any cluster. Eighty-six percent were first-termers, and 92 percent held the 3- or 5-skill level. Only 11 percent supervised. Also Battery Shop Personnel had one of the lowest average number of tasks performed of any 423X0 cluster.

As expected with junior airmen clusters, Battery Shop Personnel indicated lower job interest and perceived utilization of talents ratings than other groups in the sample. The job involved a few, relatively simple tasks which were repeated frequently.

IV. Aircraft Electrical Systems Management Personnel. This cluster of 218 management personnel (10 percent of sample) was distinguished by the large amount of time they spent on management and supervision tasks (68 percent), and on preparing forms, records, or



reports (11 percent). They also spent smaller amounts of time performing quality control and inspecting aircraft electrical circuit components in conjunction with their supervisory duties. Common tasks performed by these management personnel included coordinating with maintenance control, planning and scheduling work assignments, determining work priorities, directing maintenance or utilization of equipment, developing or improving work methods or procedures, evaluating compliance with work standards, preparing or indorsing airmen performance reports, and counseling personnel on personal or military-related problems.

Four major groups were identified within this cluster, the largest of which was a group of 129 branch and shop chiefs. These chiefs spent the majority of their time directing and implementing. Variations within this job group included shop NCOICs, aerospace systems branch chiefs, and other branch chiefs. These subgroups differed primarily on percent time spent on tasks. The second management group identified within this cluster was of superintendents and senior branch supervisors. This group was composed of E-7 through E-9s who spent more of their time on management functions than the group of branch and shop chiefs. The third management group identified performed a higher percentage of training-related tasks along with their emphasis on management and supervision. This job group was composed of technical training instructor-supervisors and on-the-job training supervisors. The fourth management job group was composed of battery shop supervisors who spent more time bench checking than the other three job types within this cluster. These battery shop chiefs differed from those identified in the Battery Shop Personnel cluster (III) in their higher degree of emphasis on management and supervision tasks as opposed to performance of technical tasks.

Aircraft Electrical Systems Management Personnel had the highest time in service, and held an average grade of E-7. Eighty-eight percent supervised an average of nine subordinates. They performed the second highest average number of tasks (85) in the sample.

Eighty-five percent of these managers indicated their job was interesting, and a large percent indicated their job used their talents (87 percent) and training (86 percent) fairly well or better.

V. Combat Logistics Support Specialists (GRP029). This group of 23 respondents (one percent of the sample) distinguished themselves from other clusters by the large amount of time they spent performing general aircraft electrical maintenance tasks, and routine prototype Time Compliance Technical Order (TCTO) modifications. Other characteristic tasks included rewiring aircraft electrical systems, crimping wires, installing, removing and cleaning, connector plugs, fabricating wiring harnesses, performing solderless connector insertions or extractions; and fabricating electrical leads and compact wire bundles.

Most personnel in this cluster were assigned to AFLC and were stationed within the CONUS. Most held the 5- or 7-skill level, and

only 17 percent are in their first enlistment. Only 35 percent supervise.

Combat Logistics Support Specialists had the lowest expressed job interest. Write-in comments supported this finding, stating that they did not like working at the depot's slow pace, and that their job offered only a narrow range of tasks, which respondents felt would harm their career progression. Members of this cluster did perform an average of only 20 tasks, the lowest number of average tasks performed with the exception of technical training instructors. Another comment voiced by members of this cluster was that they frequently went TDY to perform TCTO modification assistance. It is not known whether such TDYs contributed to decreased job interest, or rather, made job interest higher than it would otherwise be. Personnel in this job cluster also had the second lowest perceived utilization of talents and the lowest utilization of training indices, with 35 percent stating their talents and 48 percent stating their training was used "little or not at all". These low job satisfaction indices bear management attention, especially since personnel in this cluster are primarily career airmen, a group that normally has higher job interest.

VI. Aircraft Electrical Systems Instructors. These instructors were distinguished by the large amount of time (67 percent) they spent conducting training. Also, 15 percent of their time was spent in performing directing and implementing tasks, and eight percent of their time was spent on preparing forms, records, or reports. Representative tasks include conducting resident course classroom training; developing, administering, and scoring tests; demonstrating how to locate technical information; maintaining training records, charts, or graphs; evaluating progress of resident course students; and counseling personnel on personal or military-related problems.

This group of 35 was comprised primarily of resident technical training instructors, with six field training detachment (FTD) instructors and one Inter-American Air Force Academy instructor. All these instructors held the 5- or 7-skill level, and had an average grade of E-5. None supervised. Instructor supervisors grouped within the management cluster (IV), and other associated training personnel such as the CDC writer and training scheduler/monitors possessed such heterogeneous jobs that they did not cluster with this group of instructors. Instructors performed the fewest average number of tasks (15) of any cluster, spending most their time on a few instruction-related tasks.

Eighty-eight percent of instructors indicated their job was interesting--the highest percentage of any cluster. A large percentage of instructors also indicated their job used their talents and training fairly well or better.



TABLE 4  
SELECTED BACKGROUND DATA ON CAREER LADDER FUNCTIONAL GROUPS

	AIRCRAFT ELECTRICIANS	QUALITY CONTROL PERSONNEL	BATTERY SHOP PERSONNEL	AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL	COMBAT LOGISTICS SUPPORT SPECIALISTS	AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS
NUMBER IN GROUP	1,723	40	79	218	23	35
PERCENT OF SAMPLE	76%	2%	3%	10%	1%	2%
PERCENT LOCATED IN CONUS	76%	88%	89%	84%	96%	94%

	4.0	5.6	3.1	6.9	4.6	5.2
AVERAGE GRADE	4.0	5.6	3.1	6.9	4.6	5.2
AVERAGE TIME IN CAREER FIELD (MONTHS)	61	151	23	208	106	103
AVERAGE TIME IN SERVICE (MONTHS)	67	162	28	227	116	116

PERCENT IN FIRST ENLISTMENT	58%	10%	86%	2%	17%	14%
PERCENT SUPERVISING	31%	25%	11%	86%	35%	0%
AVERAGE NUMBER SUPERVISED BY THOSE SUPERVISING	4.2	4.0	1.9	9.2	2.8	0.0
AVERAGE NUMBER OF TASKS PERFORMED	122	59	26	85	20	15

NOT INDICATED	2%	0%	3%	4%	0%	0%
42330	8%	10%	41%	0%	9%	0%
42350	64%	10%	51%	6%	39%	34%
42370	24%	65%	5%	39%	52%	66%
42399	-	15%	0%	51%	0%	0%

TABLE 5

**COMPARISON OF JOB SATISFACTION INDICES BY CAREER LADDER FUNCTIONAL GROUPS  
(PERCENT MEMBERS PERFORMING)**

	AIRCRAFT ELECTRICIANS	QUALITY CONTROL PERSONNEL	BATTERY SHOP PERSONNEL	AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL	COMBAT LOGISTICS SUPPORT SPECIALISTS	AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS
<b>EXPRESSED JOB INTEREST</b>						
NOT REPORTED	3	7	3	3	0	0
DULL	9	0	15	5	26	9
SO-SO	18	10	20	7	17	3
INTERESTING	70	83	62	85	57	88
<b>PERCEIVED UTILIZATION OF TALENTS</b>						
NOT REPORTED	1	2	1	2	0	0
LITTLE OR NOT AT ALL	18	5	39	11	35	17
FAIRLY WELL TO VERY WELL	71	73	56	63	56	74
EXCELLENTLY OR PERFECTLY	10	20	4	24	9	9
<b>PERCEIVED UTILIZATION OF TRAINING</b>						
NOT REPORTED	1	2	1	2	0	0
LITTLE OR NOT AT ALL	19	8	34	12	48	17
FAIRLY WELL TO VERY WELL	71	65	60	62	44	63
EXCELLENTLY OR PERFECTLY	9	25	5	24	4	20



## ANALYSIS OF DAFSC GROUPS

In conjunction with identifying the job structure of the career ladder, it is important to examine skill level differences of members and relate these differences back to the job structure. In addition, this information can be compared to the career ladder documents such as AFR 39-1 specialty descriptions and the Specialty Training Standard (STS) in order to determine how accurately these documents reflect what career ladder personnel are actually doing in the field.

Table 6 presents the relative percent time spent by skill level groups on each duty. Like most career ladders, the management, supervision, and training duties (A, B, C, and D) consumed a larger portion of respondents time at the higher skill levels. On the other hand, lower skill level personnel spent a larger proportion of their time in the technical duties, such as performing general aircraft electrical maintenance, inspecting circuit components, isolating malfunctions and bench checking components (Duties J, G, H, and I). Quality control (Duty F) appeared to increase with increasing skill level. Preparing forms, records, or reports (Duty E) and maintaining test equipment (Duty K) remained relatively constant across DAFSC groups, except that 42399 personnel spent virtually no time on the latter.

### Skill Level Descriptions

DAFSCs 42330 and 42350. Three- and 5-skill level DAFSC personnel performed essentially the same job, with few exceptions. Both groups spent over 94 percent of their time accomplishing technical tasks such as general aircraft electrical maintenance tasks (Duty J), inspecting aircraft electrical circuit components (Duty G), and isolating malfunctions (Duty H). Table 6, which presents percent time spent performing duties by DAFSC groups, also indicates that 42330 airmen spent more time performing general maintenance tasks and preparing forms than 42350 personnel. The 5-skill level personnel, on the other hand, spent more time isolating malfunctions.

Table 7 presents the distribution of each DAFSC group across functional groups identified in the CAREER LADDER STRUCTURE section. Most 3- and 5-skill level personnel fell into the cluster of Aircraft Electricians. Fifteen percent of 3-skill level airmen also fell into the cluster of Battery Shop Personnel, whereas only three percent of 5-skill level personnel were grouped in the same cluster.

Tables 8 and 9 present tasks frequently performed by 3- and 5-skill level personnel. These tasks are primarily general aircraft electrical maintenance, inspection, and isolation of malfunction-related tasks. Notice that 3-skill level airmen performed more form-completion and battery-related tasks than do 5-skill level personnel.

Table 12 lists the tasks which most clearly differentiate between 3- and 5-skill level personnel. This table also indicates that a higher percentage of 5-skill level personnel performed each task listed than did 3-skill level airmen. The 5-skill level personnel average 107 tasks performed while those with a 3-skill level performed an average of only 63 tasks. Thus, the scope of the 5-skill level job was broader than that for 3-skill level airmen.

**DAFSC 42370.** Personnel with the 7-skill level spent the greatest portion of their time accomplishing technical tasks such as general aircraft electrical maintenance (21 percent), inspecting aircraft electrical circuit components (19 percent), isolating malfunctions (16 percent). They also spent a sizeable portion of their time on management, supervision and training tasks (26 percent). However, this is considerably lower than most 7-skill level groups.

Tasks most frequently performed by 7-skill level personnel (See Table 10) included preparing or indorsing airman performance reports (APR), completing maintenance data collection forms (AFTO Forms 349 and 781 series), and visually inspecting and isolating malfunctions on various aircraft electrical system components.

Seventy percent of 7-skill level personnel fell into the large Aircraft Electrician Cluster. Five percent were quality control, 14 percent management personnel, and 4 percent instructors. Thus, personnel at this skill level primarily perform the basic aircraft electrician job, but a sizeable percentage have moved into management, quality control, and training positions.

Differences (listed in Table 13) between 5- and 7-skill level personnel highlight the shift from technical to management, supervision and training-related tasks at the 7-skill level. The few technical tasks listed on this table and performed by 7-skill level airmen were supervisory-related ones such as observing in-process maintenance or making on-the-spot corrective actions, and advising maintenance personnel on interpretation of maintenance procedures.

**DAFSC 42399.** Nine-skill level personnel spent 73 percent of their time on management, supervision, and training-related tasks. The 23 percent of their time spent on preparing forms, records, or reports, on performing quality control, and inspecting aircraft electrical circuit components was, for the most part, management or supervision-related. All 15 tasks performed by the largest percent of these personnel were management or supervision-related (See Table 11).

Table 14 illustrates the wide differences in percent members performing tasks, with a far greater percent of 7-skill level personnel performing technical tasks while a larger percentage of 9-skill level personnel were performing management-related tasks. Another difference contained in this table is the larger number of tasks (123) which 7-skill level personnel perform as compared the the relatively few global management tasks (80) which 9-skill level personnel perform. These



two groups have the largest differences of any two consecutive DAFSC groups.

### Summary

Three-, 5-, and 7-skill level personnel spent the largest percentage of their time accomplishing technical tasks, whereas 9-skill level personnel performed primarily management, supervision and training-related tasks. Three-skill level airmen were primarily aircraft electricians and battery shop personnel; 5-skill level personnel were primarily aircraft electricians performing a wider variety of technical tasks; 7-skill level personnel took on the added responsibility of supervision in addition to performing a larger percentage of technical tasks; 9-skill level personnel were primarily management and quality control personnel.

TABLE 6

## PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC GROUPS

DUTY	TOTAL SAMPLE (N=2,244)	DAFSC 42330 (N=211)	DAFSC 42350 (N=1,279)	DAFSC 42370 (N=574)	DAFSC 42399 (N=126)
A ORGANIZING AND PLANNING	2	-	1	4	16
B DIRECTING AND IMPLEMENTING	6	1	2	9	27
C INSPECTING AND EVALUATING	3	-	1	5	20
D TRAINING	4	-	2	8	10
E PREPARING FORMS, RECORDS, OR REPORTS	7	9	6	8	9
F PERFORMING QUALITY CONTROL	3	2	3	5	7
G INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	19	22	21	19	7
H ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS	19	16	22	16	2
I BENCH CHECK CONVENTIONAL AND SOLID STATE COMPONENTS	5	6	6	3	1
J PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	30	42	34	21	1
K MAINTAINING TEST EQUIPMENT	2	2	2	2	-



TABLE 7

## PERCENT MEMBERS PERFORMING CAREER LADDER JOBS BY DAFSC GROUPS

JOB GROUP	TOTAL SAMPLE (N=2,244)	DAFSC 42330 (N=211)	DAFSC 42350 (N=1,279)	DAFSC 42370 (N=574)	DAFSC 42399 (N=126)
AIRCRAFT ELECTRICIANS (GRP054)	77	62	87	70	4
QUALITY CONTROL PERSONNEL (GRP199)	2	2	-	5	8
BATTERY SHOP PERSONNEL (GRP033)	3	15	3	1	0
AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL (GRP017)	10	0	1	14	84
COMBAT LOGISTICS SUPPORT SPECIALISTS (GRP029)	1	1	1	2	0
AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS (GRP035)	2	0	1	4	0
PERCENT ACCOUNTED FOR IN JOB CLUSTERS	94%	80%	93%	96%	96%
PERCENT ACCOUNTED FOR IN OTHER JOBS	6%	20%	7%	4%	4%

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY DAFSC 42330 PERSONNEL

<u>TASK</u>	<u>TITLE</u>	<u>PERCENT PERFORMING</u>
E98	COMPLETE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	71
J438	CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	69
G142	VISUALLY INSPECT BATTERIES	67
J465	REMOVE OR INSTALL CONNECTOR PLUGS	66
E100	COMPLETE REPARABLE ITEM PROCESSING TAG FORMS	66
G173	VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	64
J521	REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	62
J448	PERFORM GENERAL HOUSEKEEPING MAINTENANCE IN ELECTRICAL SHOP	62
J528	SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	62
H248	ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	60
G138	VISUALLY INSPECT ANTISKID CIRCUIT COMPONENTS	57
G160	VISUALLY INSPECT ELECTRICAL BONDS OR GROUNDS	57
G170	VISUALLY INSPECT EXTERIOR LIGHTING CIRCUIT COMPONENTS	57
H252	ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAD DETECTION CIRCUITS	56
J435	CLEAN LEAD ACID, NICKEL-CADMIUM OR SILVER ZINC BATTERIES	55



TABLE 9

REPRESENTATIVE TASKS PERFORMED BY DAFSC 42350 PERSONNEL

<u>TASK</u>	<u>TITLE</u>	<u>PERCENT PERFORMING</u>
H212	ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	82
J521	REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	82
J438	CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	81
J528	SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	81
H248	ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	81
H252	ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	80
H266	ISOLATE MALFUNCTIONS ON LANDING GEAR CONTROL AND WARNING CIRCUITS	80
H216	ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	79
J495	REMOVE OR INSTALL PINS ON CONNECTOR PLUGS	79
G173	VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	77
E288	ISOLATE MALFUNCTIONS ON WARNING LIGHT CIRCUITS	77
J465	REMOVE OR INSTALL CONNECTOR PLUGS	75
J422	CLEAN CONNECTOR PLUGS	75
G129	VISUALLY INSPECT ALTERNATING CURRENT (AC) GENERATOR SYSTEM CIRCUIT COMPONENTS	74
H220	ISOLATE MALFUNCTIONS ON ANTISKID CIRCUITS	74

TABLE 10

REPRESENTATIVE TASKS PERFORMED BY DAFSC 42370 PERSONNEL

<u>TASK</u>	<u>TITLE</u>	<u>PERCENT PERFORMING</u>
E98	COMPLETE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	76
G173	VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	76
G134	VISUALLY INSPECT AIRCRAFT AC POWER DISTRIBUTION CIRCUIT COMPONENTS	76
G129	VISUALLY INSPECT ALTERNATING CURRENT (AC) GENERATOR SYSTEM CIRCUIT COMPONENTS	75
C67	PREPARE OR INDORSE AIRMAN PERFORMANCE REPORTS (APR)	75
E107	MAKE ENTRIES ON AIRCRAFT FLIGHT AND MAINTENANCE RECORD FORMS (AFTO FORM 781 SERIES)	74
H212	ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	74
H216	ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	73
E100	COMPLETE REPARABLE ITEM PROCESSING TAG FORMS (AFTO FORM 350)	73
H252	ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	72
G170	VISUALLY INSPECT EXTERIOR LIGHTING CIRCUIT COMPONENTS	72
H248	ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	71
G186	VISUALLY INSPECT LANDING GEAR CONTROL AND WARNING CIRCUIT COMPONENTS	71
G182	VISUALLY INSPECT INTERIOR LIGHTING CIRCUIT COMPONENTS	71
G206	VISUALLY INSPECT WARNING LIGHT CIRCUIT COMPONENTS	71



TABLE 11  
REPRESENTATIVE TASKS PERFORMED BY DAFSC 42399 PERSONNEL

TASK	TITLE	PERCENT PERFORMING
B25	COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	92
B22	CONDUCT OR PARTICIPATE IN STAFF MEETINGS	91
C67	PREPARE OR INDORSE AIRMAN PERFORMANCE REPORTS (APR)	88
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	87
B30	DRAFT CORRESPONDENCE	85
B23	COORDINATE WITH MAINTENANCE CONTROL ON MAINTENANCE ACTIVITIES	83
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES	83
A2	ASSIGN SPONSORS FOR NEW PERSONNEL	81
B38	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	80
C58	EVALUATE INSPECTION REPORTS OR PROCEDURES	80
B26	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	80
A17	SCHEDULE LEAVES OR PASSES	80
C50	ANALYZE WORK LOAD REQUIREMENTS	78
C60	EVALUATE MAINTENANCE AND USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	78
A10	PLAN OR PREPARE BRIEFINGS	77

TABLE 12

TASKS WHICH MOST CLEARLY DISTINGUISH BETWEEN 42330 AND 42350 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASK	TITLE	DAFSC 42330 (N=211)	DAFSC 42350 (N=1279)	ABSOLUTE DIFFERENCE
H250	ISOLATE MALFUNCTIONS ON EXTERNAL POWER SYSTEM CIRCUITS	29	68	-39
J501	REMOVE OR INSTALL RHEOSTATS	29	66	-37
H225	ISOLATE MALFUNCTIONS ON BATTERY DISTRIBUTION CIRCUITS	26	61	-35
H218	ISOLATE MALFUNCTIONS ON AIRCRAFT FLIGHT CONTROL CIRCUITS	30	65	-35
J473	REMOVE OR INSTALL EXTERNAL POWER SYSTEM CONTROL COMPONENTS	19	52	-33
J522	REPLACE MICRO SWITCHES	38	70	-32
H216	ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	47	79	-32
H238	ISOLATE MALFUNCTIONS ON CSD CIRCUITS	28	60	-32
H264	ISOLATE MALFUNCTIONS ON JET ENGINE IGNITION SYSTEM CIRCUITS	20	52	-32
H255	ISOLATE MALFUNCTIONS ON FLAP AND SLAT CONTROL AND WARNING CIRCUITS	26	57	-31
H212	ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	52	82	-30
H242	ISOLATE MALFUNCTIONS ON ELECTRICAL OR AIR OPERATED STARTER CIRCUITS	25	55	-30
H217	ISOLATE MALFUNCTIONS ON AIRCRAFT DC POWER DISTRIBUTION CIRCUITS	43	73	-30
J524	REWIRE AIRCRAFT ELECTRICAL SYSTEMS	42	72	-29
D74	CONDUCT QJT	4	33	-29

TOTAL NUMBER OF TASKS EXCEEDING 35 PERCENT DIFFERENCE: 3  
 AVERAGE NUMBER OF TASKS PERFORMED BY 42330 PERSONNEL: 63  
 AVERAGE NUMBER OF TASKS PERFORMED BY 42350 PERSONNEL: 107



TABLE 13

TASKS WHICH MOST CLEARLY DISTINGUISH BETWEEN 42350 AND 42370 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASK	TITLE	DAFSC 42350 (N=1279)	DAFSC 42370 (N=574)	ABSOLUTE DIFFERENCE
C67	PREPARE OR INDORSE AIRMAN PERFORMANCE REPORTS (APR)	13	75	-62
B25	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS	15	68	-53
B44	SUPERVISE AES SPECIALISTS (AFSC 42350)	16	67	-51
B38	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	9	52	-43
D87	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	13	56	-43
D77	COUNSEL TRAINEES ON TRAINING PROGRESS	14	55	-41
A11	PLAN OR SCHEDULE WORK ASSIGNMENTS	13	52	-39
B26	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	16	54	-38
F121	OBSERVE IN-PROCESS MAINTENANCE OR MADE ON-THE-SPOT CORRECTIVE ACTIONS	23	61	-38
B23	COORDINATE WITH MAINTENANCE CONTROL ON MAINTENANCE ACTIVITIES	25	63	-38
F111	PREPARE INDUSTRIAL EQUIPMENT RECORD/SCHEDULE FORMS (AFTO FORM 483)	9	45	-36
D79	DETERMINE TRAINING REQUIREMENTS	6	40	-34
B45	SUPERVISE AES TECHNICIANS (AFSC 42370)	2	35	-33
A1	ASSIGN PERSONNEL TO DUTY POSITIONS	10	43	-33
D78	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	33	65	-33

TOTAL NUMBER OF TASKS EXCEEDING 35 PERCENT DIFFERENCE: 11  
 AVERAGE NUMBER OF TASKS PERFORMED BY 42350 PERSONNEL: 107  
 AVERAGE NUMBER OF TASKS PERFORMED BY 42370 PERSONNEL: 123

TABLE 14

TASKS WHICH MOST CLEARLY DISTINGUISH BETWEEN 42370 AND 42399 PERSONNEL  
(PERCENT MEMBERS PERFORMING)

TASK	TITLE	DAFSC 42370 (N=574)	DAFSC 42399 (N=126)	ABSOLUTE DIFFERENCE
J495	REMOVE OR INSTALL PINS ON CONNECTOR PLUGS	68	2	66
J438	CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	69	5	64
E252	ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	72	8	64
E216	ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	73	9	64
E248	ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	71	7	64
J521	REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	67	3	64
J451	PERFORM SOLDERLESS CONNECTOR INSERTIONS OR EXTRACTIONS	67	3	64
E212	ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	74	12	62
E288	ISOLATE MALFUNCTIONS ON WARNING LIGHT CIRCUITS	70	8	62
J528	SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	65	4	61
J524	REWIRE AIRCRAFT ELECTRICAL SYSTEMS	65	4	61
B22	CONDUCT OR PARTICIPATE IN STAFF MEETINGS	28	91	-63
C58	EVALUATE INSPECTION REPORTS OR PROCEDURES	26	80	-54
A10	PLAN OR PREPARE BRIEFINGS	24	77	-53
E30	DRAFT CORRESPONDENCE	32	85	-53
A2	ASSIGN SPONSORS FOR NEW PERSONNEL	30	81	-51
B49	SUPERVISE PERSONNEL OTHER THAN AFSC 423X0	23	74	-51

TOTAL NUMBER OF TASKS EXCEEDING 35 PERCENT DIFFERENCE: 109

AVERAGE NUMBER OF TASKS PERFORMED BY 42370 PERSONNEL: 123

AVERAGE NUMBER OF TASKS PERFORMED BY 42399 PERSONNEL: 80



## ANALYSIS OF TASK DIFFICULTY

From a listing of personnel identified for the AFS 423X0 job survey, airmen primarily holding the 7-skill level from various locations and commands were selected to rate task difficulty. Tasks were rated on a nine-point scale from extremely low to extremely high difficulty. Difficulty is defined as the length of time it takes an average career ladder member to learn to do the task. Interrater reliability (as assessed through components of variance of standardized group means) among the 39 raters was .89. Ratings were adjusted so that tasks of average difficulty have ratings of 5.00.

Tasks rated as above average in difficulty were mostly associated with supervision and training, quality control, and test equipment maintenance. In contrast, most tasks related to preparing forms, records, or reports; inspecting aircraft electrical circuit components; and performing general aircraft electrical maintenance were rated below average in difficulty. Tables 15 and 16 present a sampling of tasks which were rated as the most and the least difficult, respectively. Isolating malfunctions on alternating current (AC) system test sets dominates the most difficult tasks listed while cleaning equipment parts and equipment components are among the least difficult tasks. To further clarify task difficulty data, Tables 17 and 18 present those tasks which were rated as above and below average difficulty (5.00) and which were performed by the largest percentages of AFS 423X0 respondents.

### Job Difficulty Index (JDI)

In addition to reviewing the relative difficulty of tasks, it is useful to examine the relative difficulty of jobs. To obtain a relative Job Difficulty Index (JDI), the task difficulty ratings for tasks performed and the time spent on those tasks by specified job groups were entered into a statistically reliable formula which predicts overall job difficulty. The resultant JDIs provide a relative measure of how jobs vary in difficulty when compared to other jobs identified in the sample. The index ranks jobs on a scale of one (for very easy jobs) to 25 (for very difficult jobs). The indices are then adjusted so that the average JDI is 13.00. Individual JDIs were computed for the major job groups identified in the CAREER LADDER STRUCTURE section of this report. These indices are listed in Table 19.

Within the AFS 423X0 survey sample, Battery Shop Personnel performed the job rated least difficult, while the two job groups of Aircraft Electricians and Aircraft Electrical Systems Management Personnel performed jobs rated above average in difficulty.

TABLE 15

## THE 15 TASKS RATED AS MOST DIFFICULT FOR DAFSC 423X0

TASKS	TASK DIFFICULTY RATING	PERCENT MEMBERS PERFORMING (N=2,244)
K542 ISOLATE MALFUNCTIONS ON AC SYSTEM T-170 TEST SETS	8.79	5
K551 ISOLATE MALFUNCTIONS ON CONTROL PANEL T-35 TEST SETS	8.29	5
K548 ISOLATE MALFUNCTIONS ON BASIC FIELD HC-2 TEST STANDS	7.87	12
A6 DRAFT BUDGET OR FINANCIAL REQUIREMENTS	7.82	6
H212 ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	7.77	73
K554 ISOLATE MALFUNCTIONS ON JET ENGINE TEST CELLS	7.72	12
B48 SUPERVISE FOREIGN EXCHANGE TECHNICIANS	7.56	2
D60 DEVELOP COURSE CURRICULA, PLANS OF INSTRUCTION (POI), OR SPECIALTY TRAINING STANDARDS (STS)		
K543 ISOLATE MALFUNCTIONS ON AC SYSTEM T-509 TEST SETS	7.55	7
K546 ISOLATE MALFUNCTIONS ON AIRCRAFT GENERATOR VARI-DRIVE TEST STANDS	7.55	1
K544 ISOLATE MALFUNCTIONS ON AC SYSTEM 284 TEST SETS	7.47	8
H245 ISOLATE MALFUNCTIONS ON ENGINE ANALYZER CIRCUITS	7.42	1
A20 SERVE ON RESEARCH COMMITTEES TO DEVELOP NEW MAINTENANCE METHODS	7.41	4
H216 ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	7.39	5
H230 ISOLATE MALFUNCTIONS ON CADIC CIRCUITS	7.37	70
	7.33	3



TABLE 16

THE 15 TASKS RATED AS LEAST DIFFICULT FOR DAFSC 423X0

TASKS	TASK DIFFICULTY RATING	PERCENT MEMBERS PERFORMING (N=2,244)
J429 CLEAN INTERNAL PARTS OF MOTORS	3.19	14
E107 MAKE ENTRIES ON AIRCRAFT FLIGHT AND MAINTENANCE RECORD FORMS (AFTO FORM 781 SERIES)		
J425 CLEAN INTERNAL PARTS OF CONTROL BOXES	3.14	66
J430 CLEAN INTERNAL PARTS OF ROTARY INVERTERS	3.12	13
J428 CLEAN INTERNAL PARTS OF GENERATORS	3.12	5
J427 CLEAN INTERNAL PARTS OF DETECTOR COMPONENTS	3.09	16
E94 COMPLETE CONDITION TAGS AND LABELS	3.04	10
J448 PERFORM GENERAL HOUSEKEEPING MAINTENANCE IN ELECTRICAL SHOP	3.02	48
E112 PREPARE INVENTORY SHEETS FOR TOOL KITS	2.89	60
E96 COMPLETE DANGER TAG FORMS (AF FORM 1492)	2.87	24
J439 FABRICATE BONDINGS	2.86	37
J521 REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	2.84	26
A17 SCHEDULE LEAVES OR PASSES	2.71	71
K557 PAINT SHOP EQUIPMENT	2.52	15
A2 ASSIGN SPONSORS FOR NEW PERSONNEL	2.32	31
	1.40	15

TABLE 17

THE 15 TASKS RATED MOST DIFFICULT AND PERFORMED BY THE LARGEST PERCENTAGES OF DAFSC 423X0 RESPONDENTS

TASKS	TASK DIFFICULTY RATING	PERCENT MEMBERS PERFORMING (N=2,244)
E212 ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	7.77	73
E216 ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	7.37	70
E218 ISOLATE MALFUNCTIONS ON AIRCRAFT FLIGHT CONTROL CIRCUITS	6.99	57
E266 ISOLATE MALFUNCTIONS ON LANDING GEAR CONTROL AND WARNING CIRCUITS	6.47	70
E217 ISOLATE MALFUNCTIONS ON AIRCRAFT DC POWER DISTRIBUTION CIRCUITS	6.43	64
E220 ISOLATE MALFUNCTIONS ON ANTISKID CIRCUITS	6.32	65
J524 REWIRE AIRCRAFT ELECTRICAL SYSTEMS	6.19	63
G186 VISUALLY INSPECT LANDING GEAR CONTROL AND WARNING CIRCUIT COMPONENTS	5.56	66
G134 VISUALLY INSPECT AIRCRAFT AC POWER DISTRIBUTION CIRCUIT COMPONENTS	5.53	67
G129 VISUALLY INSPECT ALTERNATING CURRENT (AC) GENERATOR SYSTEM CIRCUIT COMPONENTS	5.23	69
G138 VISUALLY INSPECT ANTISKID CIRCUIT COMPONENTS	5.20	64
E288 ISOLATE MALFUNCTIONS ON WARNING LIGHT CIRCUITS	5.19	68
J452 PERFORM TC TO MODIFICATIONS OF AIRCRAFT ELECTRICAL SYSTEMS	5.17	60
G173 VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	5.08	72
E252 ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	5.08	72



TABLE 18

THE 15 TASKS RATED LEAST DIFFICULT AND PERFORMED BY THE LARGEST PERCENTAGES OF DAFSC 423X0 RESPONDENTS

TASKS	TASK DIFFICULTY RATING	PERCENT MEMBERS PERFORMING (N=2,244)
G142 VISUALLY INSPECT BATTERIES	4.46	63
J495 REMOVE OR INSTALL PINS ON CONNECTOR PLUGS	4.43	68
G206 VISUALLY INSPECT WARNING LIGHT CIRCUIT COMPONENTS	4.31	64
J451 PERFORM SOLDERLESS CONNECTOR INSERTIONS OR EXTRACTIONS	4.29	62
J528 SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	4.27	70
G182 VISUALLY INSPECT INTERIOR LIGHTING CIRCUIT COMPONENTS	4.03	66
J465 REMOVE OR INSTALL CONNECTOR PLUGS	3.97	67
G170 VISUALLY INSPECT EXTERIOR LIGHTING CIRCUIT COMPONENTS	3.88	66
J438 CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	3.76	73
H248 ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	3.63	72
J422 CLEAN CONNECTOR PLUGS	3.37	66
E100 COMPLETE REPARABLE ITEM PROCESSING TAG FORMS (AFTO FORM 350)	3.28	65
E98 COMPLETE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	3.27	67
E107 MAKE ENTRIES ON AIRCRAFT FLIGHT AND MAINTENANCE RECORD FORMS (AFTO FORM 781 SERIES)	3.14	66
J521 REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	2.71	71

TABLE 19

## JOB DIFFICULTY INDICES AND RELATED DATA BY JOB GROUPS

<u>JOB GROUPS</u>	<u>AVERAGE NUMBER OF TASKS PERFORMED</u>	<u>ATDPUTS*</u>	<u>JDI</u>
I. AIRCRAFT ELECTRICIANS (N=1,723)	122	4.73	14.1
II. QUALITY CONTROL PERSONNEL (N=40)	59	4.90	10.8
III. BATTERY SHOP PERSONNEL (N=79)	26	4.11	2.1
IV. AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL (N=218)	85	5.10	14.0
V. COMBAT LOGISTICS SUPPORT SPECIALISTS (N=23)	20	4.74	5.9
VI. AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS (N=35)	15	5.51	10.7

\* AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT



## ANALYSIS OF CONUS VERSUS OVERSEAS GROUPS

Comparisons of the tasks performed and background data for DAFSC 42350 respondents assigned to CONUS versus overseas locations were examined. Generally, the tasks performed and the time spent performing tasks varied little between CONUS and overseas groups. CONUS respondents spent slightly more time maintaining NESA glass anti-icing circuit components while overseas incumbents spent more time troubleshooting and repairing nose-wheel steering circuits and components. Overseas respondents reported performing an average of 105 tasks as compared to 108 tasks by CONUS personnel. Table 20 presents those ten tasks which best differentiate between CONUS and overseas DAFSC 42350 groups.

Comparison of background data indicated that overseas respondents averaged more time in the service (50 months versus 40 months for CONUS respondents) and more time in the career field (45 months versus 36 months). Approximately 81 percent of CONUS-based respondents were assigned to SAC, TAC, and MAC while 82 percent of the overseas respondents were USAFE, MAC, and PACAF resources.

Summarily, no substantial differences were identified between CONUS and overseas groups.

TABLE 20

TASKS WHICH DISCRIMINATE MOST CLEARLY BETWEEN DAFSC 42350 CONUS AND OVERSEAS GROUPS  
(PERCENT MEMBERS PERFORMING)

TASKS	CONUS (N=995)	OVERSEAS (N=284)	DIFFERENCE
G188 REMOVE OR INSTALL NOSE WHEEL STEERING CIRCUIT COMPONENTS	49	28	+21
J492 REMOVE OR INSTALL MESA GLASS ANTI-ICING CIRCUIT COMPONENTS	43	24	+19
H269 ISOLATE MALFUNCTIONS ON MESA GLASS ANTI-ICING CIRCUITS	50	32	+18
J491 REMOVE OR INSTALL MOTORS ON ROTATING BEACONS, TAXI LIGHTS OR LANDING LIGHTS	43	27	+16
J494 REMOVE OR INSTALL NOSE WHEEL STEERING CIRCUIT COMPONENTS	35	57	-22
G166 VISUALLY INSPECT ELECTRICALLY OPERATED NOSE-WHEEL STEERING CIRCUIT COMPONENTS	44	64	-20
H255 ISOLATE MALFUNCTIONS ON FLAP AND SLAT CONTROL AND WARNING CIRCUITS	52	71	-19
H270 ISOLATE MALFUNCTIONS ON NOSE-WHEEL STEERING CIRCUITS	51	68	-17
G175 VISUALLY INSPECT FLAP AND SLAT CONTROL AND WARNING CIRCUIT COMPONENTS	44	61	-17
H284 ISOLATE MALFUNCTIONS ON TAIL HOOK CONTROL CIRCUITS	20	35	-15



## ANALYSIS OF AFMS GROUPS

Utilization patterns for survey respondents in various AFMS groups were reviewed to determine differences in tasks performed. No major deviations from the usual pattern of supervision-related tasks and duties increasing with time in service were noted. As expected, more junior airmen spent more time on technically-oriented duties (See Table 21). A shift in time spent on duty emphasis occurs at the fourth enlistment (145-192 months AFMS), the point at which survey respondents increased their percent time spent on supervision, management, and training duties. A second change occurred at the sixth enlistment (AFMS 241+ months) when less than 30 percent of job time was spent on technical duties. All but the 241+ months AFMS group spent the majority of their time inspecting and isolating malfunctions on aircraft electrical systems, and performing general aircraft electrical maintenance tasks (Duties G, H, and J).

### First Job Assignment Personnel

First job assignment (1-24 months AFMS) airmen performed the less difficult technical tasks of inspecting and isolating malfunctions, and performing general aircraft electrical maintenance. Seventy-nine percent of first job personnel were identified in the Aircraft Electrician cluster, and nine percent fell into the Battery Shop cluster. It is important to note that the nine percent who fell into the Battery Shop Personnel cluster comprised 71 percent of that cluster.

Representative tasks performed by first job assignment personnel are listed in Table 22. These 15 tasks were all technical or administrative, and most were rated below average in task difficulty.

Equipment usage among first job personnel is highlighted in Table 23. Multimeters, anti-skid testers, load banks, ammeters, and battery analyzers were used by over 50 percent of first job personnel. Notice that transistor testers were used by only two percent of first job and first enlistment personnel as this related to solid state tasks.

TABLE 21

## PERCENT TIME SPENT PERFORMING DUTIES BY AFMS GROUPS

DUTIES	MONTHS AFMS					
	1-48 (N=1,161)	49-96 (N=365)	97-144 (N=252)	145-192 (N=116)	193-240 (N=194)	241+ (N=143)
<u>MANAGEMENT, SUPERVISION, AND TRAINING</u>						
A ORGANIZING AND PLANNING	-	2	2	5	6	14
B DIRECTING AND IMPLEMENTING	2	5	6	12	15	23
C INSPECTING AND EVALUATING	-	1	3	6	9	16
D TRAINING	1	5	7	9	8	10
	3	13	18	32	38	63
TOTAL						
<u>ADMINISTRATIVE</u>						
E PREPARING FORMS, RECORDS, OR REPORTS	7	6	6	8	9	9
<u>TECHNICAL</u>						
F PERFORMING QUALITY CONTROL	2	3	4	5	6	7
G INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	21	19	23	16	14	10
H ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS	21	21	19	16	12	4
I BENCH CHECK CONVENTIONAL AND SOLID STATE COMPONENTS	6	5	3	3	3	1
J PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	37	31	25	18	16	5
K MAINTAINING TEST EQUIPMENT	2	2	2	2	2	1
	89	81	76	60	53	28
TOTAL						



TABLE 22

REPRESENTATIVE TASKS PERFORMED BY 423X0 FIRST JOB AIRMEN  
(1-24 MONTHS AFMS)

TASKS	PERCENT MEMBERS PERFORMING	TASK DIFFICULTY RATING
J438 CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	77	3.76
J521 REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	75	2.71
J528 SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	74	4.27
H248 ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	72	3.63
J465 REMOVE OR INSTALL CONNECTOR PLUGS	72	3.97
G142 VISUALLY INSPECT CARGO HOIST CIRCUIT COMPONENTS	70	4.46
G173 VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	70	5.08
H212 ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	70	7.77
E98 COMPLETE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	69	3.27
H252 ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	69	5.08
J422 CLEAN CONNECTOR PLUGS	69	3.37
J448 PERFORM GENERAL HOUSEKEEPING MAINTENANCE IN ELECTRICAL SHOP	68	2.89
H266 ISOLATE MALFUNCTIONS ON LANDING GEAR CONTROL AND WARNING CIRCUITS	68	6.47
J495 REMOVE OR INSTALL PINS ON CONNECTOR PLUGS	68	4.43
H216 ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	66	7.37

TABLE 23

TEST EQUIPMENT USED BY THE LARGEST AND SMALLEST PERCENTAGES  
OF FIRST JOB AND FIRST ENLISTMENT PERSONNEL  
(PERCENT MEMBERS USING)

TEST EQUIPMENT	FIRST JOB (1-24 MOS AFMS) (N=596)	FIRST ENL (1-48 MOS AFMS) (N=1,161)
MULTIMETERS	94	95
ANTI-SKID TESTERS	58	65
LOAD BANKS	58	56
AMMETERS	56	58
BATTERY ANALYZERS	53	55
AIRCRAFT GENERATOR TEST STANDS (VARI- DRIVE)	38	42
FIRE DETECTOR TESTERS	37	43
WHEATSTONE BRIDGES	33	32
BASIC FIELD TEST STANDS (MC-2)	32	32
RESISTANCE DECADE BOXES	9	12
IGNITION TESTERS	8	8
VIBRATION METERS	7	8
WINDSHIELD CONTROL TESTERS	6	8
TUBE TESTERS	6	8
LINEAR ACTUATOR TEST STANDS	5	7
MAGNETO TEST STANDS	3	2
ROTARY ACTUATOR TEST STANDS	3	3
UNIVERSAL STARTER TEST STANDS	2	2
TRANSISTOR TESTERS	2	2



TABLE 22

**REPRESENTATIVE TASKS PERFORMED BY 423X0 FIRST JOB AIRMEN  
(1-24 MONTHS AFMS)**

<b>TASKS</b>	<b>PERCENT MEMBERS PERFORMING</b>	<b>TASK DIFFICULTY RATING</b>
J438 CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	77	3.76
J521 REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS	75	2.71
J528 SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS	74	4.27
H248 ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS	72	3.63
J465 REMOVE OR INSTALL CONNECTOR PLUGS	72	3.97
G142 VISUALLY INSPECT CARGO HOIST CIRCUIT COMPONENTS	70	4.46
G173 VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS	70	5.08
H212 ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS	70	7.77
E98 COMPLETE MAINTENANCE DATA COLLECTION RECORD FORMS (AFTO FORM 349)	69	3.27
H252 ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS	69	5.08
J422 CLEAN CONNECTOR PLUGS	69	3.37
J448 PERFORM GENERAL HOUSEKEEPING MAINTENANCE IN ELECTRICAL SHOP	68	2.89
H266 ISOLATE MALFUNCTIONS ON LANDING GEAR CONTROL AND WARNING CIRCUITS	68	6.47
J495 REMOVE OR INSTALL PINS ON CONNECTOR PLUGS	68	4.43
H216 ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS	66	7.37

### Job Satisfaction Data

Job interest, perceived utilization of talents and training, and reenlistment intentions for AFMS groups are presented in Table 24, along with comparative sample data taken from all mission equipment maintenance career ladders surveyed in 1977. (These comparative sample career ladders included ladders in the following fields: 30XXX, 31XXX, 32XXX, 34XXX, 36XXX, 40XXX, 42XXX, 43XXX, 44XXX, and 46XXX.) When compared with the mission equipment maintenance comparative sample group, 423X0 airmen rated their career ladder's job about the same as the average of the 1977 sample. Overall, the majority of 423X0 personnel their job interesting (71 percent), feel their job utilizes their talents fairly well to very well (80 percent), believe their job utilizes their training fairly well to very well (79 percent), and plan to reenlist or probably reenlist (51 percent).



TABLE 24

**JOB INTEREST, PERCEIVED UTILIZATION OF TALENTS AND TRAINING, AND  
REENLISTMENT INTENTIONS FOR AFPS GROUPS  
(PERCENT RESPONDING)**

	MONTHS TOTAL ACTIVE FEDERAL SERVICE					
	1-48		49-96		97+	
	1st JOB (1-24 MONTHS AFPS)	COMPARATIVE* 423XO SAMPLE	COMPARATIVE* 423XO SAMPLE	COMPARATIVE* 423XO SAMPLE	423XO	COMPARATIVE* SAMPLE
<b>I FIND MY JOB:</b>						
NO RESPONSE	2	3	3	-	4	-
DULL	9	9	12	17	7	9
SO-SO	17	19	23	21	11	11
INTERESTING	72	69	62	62	79	80
<b>MY JOB UTILIZES MY TALENTS:</b>						
NO RESPONSE	1	1	1	-	2	-
NOT AT ALL OR VERY LITTLE	21	22	22	32	13	14
FAIRLY WELL TO VERY WELL	72	70	70	64	66	68
EXCELLENTLY OR PERFECTLY	6	7	7	4	19	18
<b>MY JOB UTILIZES MY TRAINING:</b>						
NO RESPONSE	1	1	1	-	2	-
NOT AT ALL OR VERY LITTLE	22	21	24	26	14	18
FAIRLY WELL TO VERY WELL	66	71	70	67	65	63
EXCELLENTLY TO PERFECTLY	9	7	5	7	19	19
<b>MY REENLISTMENT PLANS ARE TO:</b>						
NO RESPONSE	2	2	2	-	1	-
NOT OR PROBABLY NOT REENLIST	59	60	40	61	31	28
TO REENLIST OR PROBABLY REENLIST	39	38	58	39	68	72

\* THE COMPARATIVE SAMPLE WAS TAKEN FROM ALL MISSION-EQUIPMENT MAINTENANCE CAREER LABBERS SURVEYED IN 1977 (AFSCs 30XX, 31XX, 32XX, 34XX, 40XX, 42XX, 43XX, 44XX, AND 46XX).

## COMPARISON OF CAREER LADDER DOCUMENTS TO SURVEY DATA

### AFR 39-1 Specialty Descriptions

Survey data were compared with the specialty descriptions found in AFR 39-1. In general, the specialty descriptions gave a thorough and accurate picture of the Aircraft Electrical Systems Maintenance functions 42330, 42350, 42370, and 42399 personnel were actually doing in the field.

### Specialty Training Standard (STS)

A review of the draft STS 423X0, dated September 1978, was made for the 3-, 5-, and 7-skill levels. Assistance was provided by subject matter specialists at the Technical Training School who matched inventory tasks with STS items. Each of the STS subparagraphs containing task knowledge or performance requirements were compared to the survey results. Subparagraphs containing only general information or subject knowledge proficiency level requirements were not evaluated.

Overall, the STS appears to be complete in providing general training requirements. Most STS subparagraphs were supported by the survey data. Furthermore, several tasks listed in the inventory were not linked with specific STS items, even though they did relate to the general subject area (specific STS paragraph number). These tasks might be examined by subject matter specialists to determine whether they are sufficiently important for inclusion in subparagraphs of the STS. Data reflecting the match between STS items and survey sample responses was furnished the technical training school for this purpose.



## SOLID STATE TASKS

One of the reasons for conducting this survey was to determine the percent members performing and percent time spent on solid state tasks in order to furnish training officials with data with which to examine the amount of solid state training added to 423X0 career ladder courses. To organize these data, inventory tasks labeled "solid state" were grouped and tasks labeled "conventional" were likewise grouped to facilitate a comparison. Of 467 technical tasks in the inventory, 67 could be clearly distinguished as solid state or conventional.

Of the 40 specified solid state tasks, 11 were performed by between 10 and 19 percent of the total sample. The solid state task performed by the largest percent of the sample was removing or installing solid state components such as conductors, diodes, or transistors on printed circuit boards. This task was performed by 19 percent of the total sample, 12 percent of first-job airmen, and 21 percent of 5-skill level personnel. (See Table 25 for the 10 most performed solid state tasks with data for various career ladder groups.)

Of the 27 tasks labeled as "conventional", 10 were performed by between 10 and 27 percent of the total sample. The conventional task most highly performed was removing or installing resistors or capacitors on conventional circuits. This task was performed by 27 percent of the total sample, 21 percent of first-job airmen, and 32 percent of 5-skill level personnel. Table 26 presents the 10 most highly performed conventional tasks.

Percent time spent on tasks identifiable as solid state or conventional were also compared. The average relative percent time spent on the 40 tasks labeled solid state was 1.5 percent versus 1.6 on the 27 conventional tasks. These two groups of tasks consumed approximately the same average relative percentage of time as Maintaining Test Equipment (Inventory Duty K), which was composed of 31 tasks and consumed 1.8 percent of the total sample's time.

A detailed computer printout was forwarded to the technical training center for a closer examination by subject matter specialists to assist them in determining solid state training priorities.

TABLE 25

THE TEN SOLID STATE SYSTEMS TASKS PERFORMED BY THE LARGEST PERCENTAGES OF  
AFS 42320 RESPONDENTS

TASK	TOTAL SAMPLE (N=2,224)	1st JOB 1-24 NOS (N=596)	DAFSC 42330 (N=211)	DAFSC 42350 (N=1,279)	DAFSC 42370 (N=574)	TASK DIFFICULTY RATING
J506 REMOVE OR INSTALL SOLID STATE COMPONENTS SUCH AS SEMICONDUCTORS, DIODES, OR TRANSISTORS OF PRINTED CIRCUIT BOARDS	19	12	11	21	21	6.65
J507 REMOVE OR INSTALL SOLID STATE CIRCUIT BOARDS	17	9	7	18	22	4.79
J449 PERFORM HIGH RELIABILITY SOLDERING ON SOLID STATE CIRCUIT BOARDS	17	16	14	19	15	6.34
I209 REPAIR CHECK AC GENERATORS WITH SOLID STATE COMPONENTS	17	10	7	17	23	5.72
I205 REPAIR CHECK AC CONTROL PANELS WITH SOLID STATE COMPONENTS	16	13	12	17	19	5.64
J500 REMOVE OR INSTALL RESISTORS OR CAPACITORS ON SOLID STATE CIRCUIT BOARDS	14	9	7	15	16	5.71
G200 VISUALLY INSPECT SOLID STATE INVERTER CIRCUIT COMPONENTS	12	9	7	12	14	4.83
I304 REPAIR CHECK AC VOLTAGE REGULATORS WITH SOLID STATE COMPONENTS	11	8	7	12	13	5.88
E202 ISOLATE MALFUNCTIONS ON SOLID STATE INVERTER SYSTEM CIRCUITS	11	7	3	12	13	5.43
E200 ISOLATE MALFUNCTIONS ON SOLID STATE HEATING CIRCUITS	11	6	4	12	15	5.40



TABLE 26

THE TEN CONVENTIONAL SYSTEMS TESTS PERFORMED BY THE LARGEST PERCENTAGES OF  
AFS ASSIGNED COMPONENTS

TASKS	TOTAL SAMPLE (N=2,224)	1-24 NOS AFSC- 1st JOB (N=596)	DAFSC 42350 (N=211)	DAFSC 42350 (N=1,279)	DAFSC 42370 (N=574)	TASK DIFFICULTY RATING
1499 REMOVE OR INSTALL RESISTORS OR CAPACITORS ON CONVENTIONAL CIRCUITS	27	21	14	32	29	4.30
1200 REMOVE CHECK AC OVERDRIVES WITH CONVENTIONAL COMPONENTS	26	29	21	32	20	5.22
1204 REMOVE CHECK AC CONTROL PANELS WITH CONVENTIONAL COMPONENTS	19	21	15	23	15	5.60
1300 REMOVE CHECK TR CIRCUIT CONVENTIONAL COMPONENTS	18	17	11	21	17	4.87
1370 REMOVE CHECK LAMPING GRAB CIRCUIT CONVENTIONAL COMPONENTS	16	10	10	17	18	4.71
1200 REMOVE CHECK AC POWER DISTRIBUTION CONVENTIONAL COMPONENTS	15	12	9	16	18	5.10
1304 REMOVE CHECK DC OVERDRIVES WITH CONVENTIONAL COMPONENTS	12	13	10	15	9	5.02
1376 REMOVE CHECK OVERHEAT WARNING CIRCUIT CONVENTIONAL COMPONENTS	11	9	8	13	9	4.60
1400 ASSEMBLY OR DISASSEMBLY CONVENTIONAL VOLTAGE REGULATORS	11	10	10	12	9	5.37
1300 REMOVE CHECK ANTIFLOOD CONVENTIONAL COMPONENTS	10	10	8	12	8	5.20

## COMPARISON OF CURRENT SURVEY TO THE 1974 SURVEY

The results of this survey were compared to those of Occupational Survey Report (OSR) AFPT 90-423-106 dated 15 May 1974. Overall, the survey findings were very similar. The high degree of homogeneity found in the previous study was apparent in the present study. All major groups identified in the 1974 study were found in the current one.

Differences between this study and the previous were very small. The present study included a larger percentage of survey respondents within Aircraft Electrician Cluster than did the previous one, with eight of the 13 groups identified in the previous study falling within the large Aircraft Electrician Cluster in the present study (See Table 27). Quality Control Personnel and Combat Logistics Support Specialists were almost identical in terms of percentage of the sample and job tasks. Battery Shop Personnel in the present study included some first-line supervisors which the previous study of Battery Shop Specialists group did not. The Aircraft Electrical Systems Instructor Cluster did not include the CDC writer and other training personnel that the previous survey did; although these personnel were identified in this study their jobs were sufficiently different that they did not fall within this cluster. Aircraft Electrical Systems Management Personnel included a number of first-line supervisors not included in the previous study's correlated group.

The May 1974 Aircraft Electrical Systems Maintenance Occupational Survey Report found an "extremely high degree of homogeneity across the 423X0 career ladder." The major factor which differentiated among the 13 major job groups was the amount of time spent performing tasks. Generally, the function of aircraft electricians was virtually the same no matter which type of aircraft the electrician was assigned.

It is apparent in reviewing the results from both surveys that the career field has remained stable over the years.



**TABLE 27**  
**COMPARISON OF CAREER LADDER STRUCTURE FOR THE 1974 AND 1978 STUDIES**

1978 STUDY (N=2,244)	PERCENT OF SAMPLE	1974 STUDY (N=1,608)	PERCENT OF SAMPLE
I. AIRCRAFT ELECTRICIANS	77	GENERAL ELECTRICAL SPECIALISTS	33
		FIRST-LINE SUPERVISORS	5
		BATTERY MAINTENANCE SPECIALISTS	3
		AIRCRAFT CIRCUITRY SPECIALISTS	4
		GENERAL ELECTRICAL TECHNICIANS	4
		AIRCRAFT GENERATOR SPECIALISTS	4
		AIRCRAFT ELECTRICAL SHOP SPECIALISTS	2
		ELECTRICAL SYSTEM TROUBLESHOOTERS	2
II. QUALITY CONTROL PERSONNEL	2	QUALITY CONTROLLERS	1
III. BATTERY SHOP PERSONNEL	4	BATTERY SHOP SPECIALISTS	3
IV. AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL	10	AIRCRAFT ELECTRICAL SYSTEMS MANAGERS	2
V. COMBAT LOGISTICS SUPPORT SPECIALISTS	1	COMBAT LOGISTIC SUPPORT SPECIALISTS	1
VI. AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS	2	TRAINERS	3

**APPENDIX A**



# I AIRCRAFT ELECTRICIANS - GEF054

<u>NUMBER IN GROUP:</u>	1,723	<u>AVERAGE GRADE:</u>	4.0
<u>PERCENT OF SAMPLE:</u>	76%	<u>AVERAGE TIME IN CAREER FIELD:</u>	61 MONTHS
<u>LOCATION:</u>	CONUS 76% OVERSEAS 24%	<u>AVERAGE TIME IN SERVICE:</u>	67 MONTHS
<u>DAFSC DISTRIBUTION:</u>	42330 6% 42350 66% 42370 24% 42390 - OTHER 2%	<u>PERCENT MEMBERS IN FIRST ENLISTMENT:</u>	56%
<u>EXPRESSED JOB INTEREST:</u>		<u>SUPERVISION:</u>	31% SUPERVISE AN AVERAGE OF 4.2 SUBORDINATES
		DULL	9%
		SO-SO	18%
		INTERESTING	70%
		NOT INDICATED	3%
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		LITTLE OR NOT AT ALL	18%
		FAIRLY WELL TO VERY WELL	71%
		EXCELLENTLY OR PERFECTLY	10%
		NOT INDICATED	1%
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		LITTLE OR NOT AT ALL	19%
		FAIRLY WELL TO VERY WELL	71%
		EXCELLENTLY OR PERFECTLY	9%
		NOT INDICATED	1%
		<u>AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:</u>	4.7
<u>AVERAGE NUMBER TASKS PERFORMED:</u>	122	<u>JOB DIFFICULTY INDEX:</u>	14.1

GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

## TASK

### NO. TASK STATEMENT

J438 CRIMP WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS  
 E252 ISOLATE MALFUNCTIONS ON FIRE AND OVERHEAT DETECTION CIRCUITS  
 E248 ISOLATE MALFUNCTIONS ON EXTERIOR LIGHTING CIRCUITS  
 E212 ISOLATE MALFUNCTIONS ON AC GENERATOR SYSTEMS  
 J521 REPLACE FUSES, CURRENT LIMITERS, OR CIRCUIT BREAKERS  
 J445 REMOVE OR INSTALL CONNECTOR PLUGS  
 J446 PERFORM GENERAL HOUSEKEEPING MAINTENANCE IN ELECTRICAL SHOP  
 J528 SOLDER WIRES TO CONNECTOR PLUGS, CONTROL BOXES OR CONTROL PANELS  
 J495 REMOVE OR INSTALL PINS ON CONNECTOR PLUGS  
 E216 ISOLATE MALFUNCTIONS ON AIRCRAFT AC POWER DISTRIBUTION CIRCUITS  
 E266 ISOLATE MALFUNCTIONS ON LANDING GEAR CONTROL AND WARNING CIRCUITS  
 E107 MAKE ENTRIES ON AIRCRAFT FLIGHT AND MAINTENANCE RECORD FORMS (AFTO FORM 781 SERIES)  
 E288 ISOLATE MALFUNCTIONS ON WARNING LIGHT CIRCUITS  
 E262 ISOLATE MALFUNCTIONS ON INTERNAL LIGHTING CIRCUITS  
 E220 ISOLATE MALFUNCTIONS ON ANTISKID CIRCUITS

### TIME SPENT ON DUTIES:

DUTY	TITLE	AVERAGE PERCENT TIME SPENT BY MEMBERS OF GEF054
J	PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	33
E	ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS	23
G	INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	22
E	PREPARING FORMS, RECORDS, OR REPORTS	6
I	BENCH CHECK CONVENTIONAL AND SOLID STATE COMPONENTS	5

# II QUALITY CONTROL PERSONNEL - GRP199

<u>NUMBER IN GROUP:</u>	40	<u>AVERAGE GRADE:</u>	5.6
<u>PERCENT OF SAMPLE:</u>	2%	<u>AVERAGE TIME IN CAREER FIELD:</u>	151 MONTHS
<u>LOCATION:</u>	CONUS 88% OVERSEAS 12%	<u>AVERAGE TIME IN SERVICE:</u>	162 MONTHS
<u>DAFSC DISTRIBUTION:</u>	42330 10% 42350 10% 42370 65% 42390 15%	<u>PERCENT MEMBERS IN FIRST ENLISTMENT:</u>	10%
<u>EXPRESSED JOB INTEREST:</u>		<u>SUPERVISION:</u>	23% SUPERVISE AN AVERAGE OF 4.0 SUBORDINATES
		DULL	0%
		SO-SO	10%
		INTERESTING	83%
		NOT INDICATED	7%
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		LITTLE OR NOT AT ALL	5%
		FAIRLY WELL TO VERY WELL	73%
		EXCELLENTLY OR PERFECTLY	20%
		NOT INDICATED	2%
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		LITTLE OR NOT AT ALL	8%
		FAIRLY WELL TO VERY WELL	65%
		EXCELLENTLY OR PERFECTLY	25%
		NOT INDICATED	2%
		<u>AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:</u>	4.9
<u>AVERAGE NUMBER TASKS PERFORMED:</u>	59	<u>JOB DIFFICULTY INDEX:</u>	10.8

## GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

### TASK

#### NO. TASK STATEMENT

G134	VISUALLY INSPECT AIRCRAFT AC POWER DISTRIBUTION CIRCUIT COMPONENTS
G173	VISUALLY INSPECT FIRE AND OVERHEAT DETECTION CIRCUIT COMPONENTS
G138	VISUALLY INSPECT ANTISKID CIRCUIT COMPONENTS
G186	VISUALLY INSPECT LANDING GEAR CONTROL AND WARNING CIRCUIT COMPONENTS
G129	VISAULLY INSPECT ALTERNATING CURRENT (AC) GENERATION SYSTEM CIRCUIT COMPONENTS
G135	VISUALLY INSPECT AIRCRAFT DIRECT CURRENT (DC) POWER DISTRIBUTION CIRCUIT COMPONENTS
G170	VISUALLY INSPECT EXTERIOR LIGHTING CIRCUIT COMPONENTS
G142	VISUALLY INSPECT BATTERIES
G204	VISUALLY INSPECT TRANSFORMER-RECTIFIER (TR) CIRCUIT COMPONENTS
G182	VISUALLY INSPECT INTERIOR LIGHTING CIRCUIT COMPONENTS
G160	VISUALLY INSPECT ELECTRICAL BONDS OR GROUNDS
G154	VISUALLY INSPECT CONSTANT SPEED DRIVE (CSD) CIRCUIT COMPONENTS
G171	VISUALLY INSPECT EXTERNAL POWER SYSTEM CIRCUIT COMPONENTS
G143	VISAULLY INSPECT BATTERY CHARGER SYSTEM CIRCUIT COMPONENTS
F125	VISUALLY INSPECT AIRCRAFT ELECTRICAL SYSTEMS FOLLOWING MAINTENANCE

### TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>TITLE</u>	<u>AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP0199</u>
G	INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	64
F	PERFORMING QUALITY CONTROL	12
C	INSPECTING AND EVALUATING	6
B	DIRECTING AND IMPLEMENTING	6
E	PREPARING FORMS, RECORDS, OR REPORTS	4
D	TRAINING	3



# III BATTERY SHOP PERSONNEL - GRP033

NUMBER IN GROUP:	79	AVERAGE GRADE:	3.1
PERCENT OF SAMPLE:	3%	AVERAGE TIME IN CAREER FIELD:	23 MONTHS
LOCATION:	CONUS 89% OVERSEAS 11%	AVERAGE TIME IN SERVICE:	28 MONTHS
DAFSC DISTRIBUTION:	42330 41% 42350 51% 42370 5% 42390 0% OTHER 3%	PERCENT MEMBERS IN FIRST ENLISTMENT:	86%
EXPRESSED JOB INTEREST:		SUPERVISION:	11% SUPERVISE AN AVERAGE OF 1.9 SUBORDINATES
		DULL	15%
		SO-SO	20%
		INTERESTING	62%
		NOT INDICATED	3%
PERCEIVED UTILIZATION OF TALENTS:		LITTLE OR NOT AT ALL	39%
		FAIRLY WELL TO VERY WELL	56%
		EXCELLENTLY OR PERFECTLY	4%
		NOT INDICATED	1%
PERCEIVED UTILIZATION OF TRAINING:		LITTLE OR NOT AT ALL	34%
		FAIRLY WELL TO VERY WELL	60%
		EXCELLENTLY OR PERFECTLY	5%
		NOT INDICATED	1%
		AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:	4.1
AVERAGE NUMBER TASKS PERFORMED:	26	JOB DIFFICULTY INDEX:	2.1

## GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

TASK NO.	TASK STATEMENT
J435	CLEAN LEAD ACID, NICKEL-CADMIUM OR SILVER ZINC BATTERIES
J525	SERVICE LEAD-ACID BATTERIES
J526	SERVICE NICKEL-CADMIUM BATTERIES
J413	ASSEMBLE OR DISASSEMBLE NICKEL-CADMIUM OR SILVER ZINC BATTERIES
I394	PERFORM CAPACITANCE TEST OR SERVICE ON NICKEL-CADMIUM BATTERIES
J466	REMOVE OR INSTALL CONNECTORS ON NICKEL-CADMIUM, LEAD-ACID OR SILVER ZINC BATTERIES
J464	REMOVE OR INSTALL CELLS OR STRAPS ON NICKEL-CADMIUM OR SILVER ZINC BATTERIES
I393	PERFORM CAPACITANCE TEST ON LEAD ACID BATTERIES

## TIME SPENT ON DUTIES:

DUTY	TITLE	AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP033
J	PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASK	54
G	INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	11
I	BENCH CHECK CONVENTIONAL AND SOLID STATE COMPONENTS	11
E	PREPARING FORMS, RECORDS, OR REPORTS	10
N	ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS	4
K	MAINTAINING TEST EQUIPMENT	3

# III BATTERY SHOP PERSONNEL - GRP033

NUMBER IN GROUP:	79	AVERAGE GRADE:	3.1
PERCENT OF SAMPLE:	3%	AVERAGE TIME IN CAREER FIELD:	23 MONTHS
LOCATION:	CONUS 89% OVERSEAS 11%	AVERAGE TIME IN SERVICE:	28 MONTHS
DAFSC DISTRIBUTION:	42330 41% 42350 51% 42370 5% 42390 0% OTHER 3%	PERCENT MEMBERS IN FIRST ENLISTMENT:	86%
		SUPERVISION:	11% SUPERVISE AN AVERAGE OF 1.9 SUBORDINATES
EXPRESSED JOB INTEREST:		DULL	15%
		SO-SO	20%
		INTERESTING	62%
		NOT INDICATED	3%
PERCEIVED UTILIZATION OF TALENTS:		LITTLE OR NOT AT ALL	39%
		FAIRLY WELL TO VERY WELL	56%
		EXCELLENTLY OR PERFECTLY	4%
		NOT INDICATED	1%
PERCEIVED UTILIZATION OF TRAINING:		LITTLE OR NOT AT ALL	34%
		FAIRLY WELL TO VERY WELL	60%
		EXCELLENTLY OR PERFECTLY	5%
		NOT INDICATED	1%
		AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:	4.1
AVERAGE NUMBER TASKS PERFORMED: 26		JOB DIFFICULTY INDEX:	2.1

## GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

### TASK

#### NO. TASK STATEMENT

J435 CLEAN LEAD ACID, NICKEL-CADMIUM OR SILVER ZINC BATTERIES  
 J525 SERVICE LEAD-ACID BATTERIES  
 J526 SERVICE NICKEL-CADMIUM BATTERIES  
 J413 ASSEMBLE OR DISASSEMBLE NICKEL-CADMIUM OR SILVER ZINC BATTERIES  
 I394 PERFORM CAPACITANCE TEST OR SERVICE ON NICKEL-CADMIUM BATTERIES  
 J466 REMOVE OR INSTALL CONNECTORS ON NICKEL-CADMIUM, LEAD-ACID OR SILVER ZINC BATTERIES  
 J464 REMOVE OR INSTALL CELLS OR STRAPS ON NICKEL-CADMIUM OR SILVER ZINC BATTERIES  
 I393 PERFORM CAPACITANCE TEST ON LEAD ACID BATTERIES

### TIME SPENT ON DUTIES:

#### DUTY TITLE

#### AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP033

J PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE  
 TASK  
 G INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS  
 I BENCH CHECK CONVENTIONAL AND SOLID STATE COMPONENTS  
 E PREPARING FORMS, RECORDS, OR REPORTS  
 H ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS  
 K MAINTAINING TEST EQUIPMENT

54  
11  
11  
10  
4  
3



#### IV AIRCRAFT ELECTRICAL SYSTEMS MANAGEMENT PERSONNEL - GRP017

<u>NUMBER IN GROUP:</u>	218	<u>AVERAGE GRADE:</u>	6.9
<u>PERCENT OF SAMPLE:</u>	10%	<u>AVERAGE TIME IN CAREER FIELD:</u>	208 MONTHS
<u>LOCATION:</u>	CONUS 84% OVERSEAS 16%	<u>AVERAGE TIME IN SERVICE:</u>	227 MONTHS
<u>DAFSC DISTRIBUTION:</u>	42330 0% 42350 6% 42370 39% 42390 51% OTHER 4%	<u>PERCENT MEMBERS IN FIRST ENLISTMENT:</u>	2%
		<u>SUPERVISION:</u>	86% SUPERVISE AN AVERAGE OF 9.2 SUBORDINATES
<u>EXPRESSED JOB INTEREST:</u>		DULL	5%
		SO-SO	7%
		INTERESTING	85%
		NOT INDICATED	3%
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		LITTLE OR NOT AT ALL	11%
		FAIRLY WELL TO VERY WELL	63%
		EXCELLENTLY OR PERFECTLY	24%
		NOT INDICATED	2%
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		LITTLE OR NOT AT ALL	12%
		FAIRLY WELL TO VERY WELL	62%
		EXCELLENTLY OR PERFECTLY	24%
		NOT INDICATED	2%
		AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:	5.1
<u>AVERAGE NUMBER TASKS PERFORMED:</u>	85	<u>JOB DIFFICULTY INDEX:</u>	14.0

#### GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

TASK NO.	TASK STATEMENT
B23	COORDINATE WITH MAINTENANCE CONTROL ON MAINTENANCE ACTIVITIES
B25	COUNSEL PERSONNEL ON PERSONAL OR MILITARY RELATED PROBLEMS
C67	PREPARE OR INDORSE AIRMAN PERFORMANCE REPORTS (APR)
B49	SUPERVISE PERSONNEL OTHER THAN AFSC 423X0
B22	CONDUCT OR PARTICIPATE IN STAFF MEETINGS
B30	DRAFT CORRESPONDENCE
B38	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES
A11	PLAN OR SCHEDULE WORK ASSIGNMENTS
A4	DETERMINE WORK PRIORITIES
B29	DIRECT MAINTENANCE OR UTILIZATION OF EQUIPMENT
B26	DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES
C54	EVALUATE COMPLIANCE WITH WORK STANDARDS
A1	ASSIGN PERSONNEL TO DUTY POSITIONS
A3	DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES
C50	ANALYZE WORK LOAD REQUIREMENTS

#### TIME SPENT ON DUTIES:

DUTY	TITLE	AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP017
B	DIRECTING AND IMPLEMENTING	27
C	INSPECTING AND EVALUATING	17
A	ORGANIZING AND PLANNING	15
E	PREPARING FORMS, RECORDS, OR REPORTS	11
D	TRAINING	10
F	PERFORMING QUALITY CONTROL	7
G	INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	5
J	PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	4

A4

# V COMBAT LOGISTICS SUPPORT SPECIALISTS - GRP029

<u>NUMBER IN GROUP:</u>	23	<u>AVERAGE GRADE:</u>	4.6
<u>PERCENT OF SAMPLE:</u>	1%	<u>AVERAGE TIME IN CAREER FIELD:</u>	106 MONTHS
<u>LOCATION:</u>	CONUS 96% OVERSEAS 4%	<u>AVERAGE TIME IN SERVICE:</u>	116 MONTHS
<u>DAFSC DISTRIBUTION:</u>	42330 9% 42350 39% 42370 52% 42390 0%	<u>PERCENT MEMBERS IN FIRST ENLISTMENT:</u>	17%
<u>EXPRESSED JOB INTEREST:</u>		<u>SUPERVISION:</u>	35% SUPERVISE AN AVERAGE OF 2.8 SUBORDINATES
		DULL	26%
		SO-SO	17%
		INTERESTING	57%
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		LITTLE OR NOT AT ALL	33%
		FAIRLY WELL TO VERY WELL	56%
		EXCELLENTLY OR PERFECTLY	9%
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		LITTLE OR NOT AT ALL	48%
		FAIRLY WELL TO VERY WELL	44%
		EXCELLENTLY OR PERFECTLY	4%
		<u>AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:</u>	4.7
<u>AVERAGE NUMBER TASKS PERFORMED:</u>	20	<u>JOB DIFFICULTY INDEX:</u>	5.8

## GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

TASK NO.	TASK STATEMENT
J452	PERFORM TC TO MODIFICATIONS OF AIRCRAFT ELECTRICAL SYSTEMS
J450	PERFORM PROTO-TYPE TC TOs

## TIME SPENT ON DUTIES:

DUTY	TITLE	AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP029
J	PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	74
F	PERFORMING QUALITY CONTROL	5
G	INSPECTING AIRCRAFT ELECTRICAL CIRCUIT COMPONENTS	5
D	DIRECTING AND IMPLEMENTING	4
C	INSPECTING AND EVALUATING	3
E	PREPARING FORMS, RECORDS, OR REPORTS	3
H	ISOLATING MALFUNCTIONS ON AIRCRAFT ELECTRICAL SYSTEMS	3



# VI AIRCRAFT ELECTRICAL SYSTEMS INSTRUCTORS - GRP052

<u>NUMBER IN GROUP:</u>	35	<u>AVERAGE GRADE:</u>	5.2
<u>PERCENT OF SAMPLE:</u>	2%	<u>AVERAGE TIME IN CAREER FIELD:</u>	103 MONTHS
<u>LOCATION:</u>	CONUS 94% OVERSEAS 3% NOT LISTED 3%	<u>AVERAGE TIME IN SERVICE:</u>	116 MONTHS
<u>DAFSC DISTRIBUTION:</u>	42330 0% 42350 34% 42370 66% 42390 0%	<u>PERCENT MEMBERS IN FIRST ENLISTMENT:</u>	14%
		<u>SUPERVISION:</u>	0% SUPERVISION
<u>EXPRESSED JOB INTEREST:</u>		DULL	9%
		SO-SO	3%
		INTERESTING	88%
<u>PERCEIVED UTILIZATION OF TALENTS:</u>		LITTLE OR NOT AT ALL	17%
		FAIRLY WELL TO VERY WELL	74%
		EXCELLENTLY OR PERFECTLY	9%
<u>PERCEIVED UTILIZATION OF TRAINING:</u>		LITTLE OR NOT AT ALL	17%
		FAIRLY WELL TO VERY WELL	63%
		EXCELLENTLY OR PERFECTLY	20%
		<u>AVERAGE TASK DIFFICULTY PER UNIT TIME SPENT:</u>	5.5
<u>AVERAGE NUMBER TASKS PERFORMED:</u>	15	<u>JOB DIFFICULTY INDEX:</u>	10.7

## GROUP DIFFERENTIATING TASKS: (TASKS PERFORMED MORE BY THIS CLUSTER THAN OTHERS)

<u>TASK NO.</u>	<u>TASK STATEMENT</u>
D75	CONDUCT RESIDENT COURSE CLASSROOM TRAINING
D77	COUNSEL TRAINEES ON TRAINING PROGRESS
D72	ADMINISTER OR SCORE TESTS
D78	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION
D87	MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS
D91	WRITE QUESTIONS OR DEVELOP TESTS
D85	EVALUATE PROGRESS OF RESIDENT COURSE STUDENTS
D80	DEVELOP COURSE CURRICULA, PLANS OF INSTRUCTION (POI), OR SPECIALTY TRAINING STANDARDS (STS)
D88	PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT

## TIME SPENT ON DUTIES:

<u>DUTY</u>	<u>TITLE</u>	<u>AVERAGE PERCENT TIME SPENT BY MEMBERS OF GRP052</u>
D	TRAINING	67
B	DIRECTING AND IMPLEMENTING	15
E	PREPARING FORMS, RECORDS, OR REPORTS	8
A	ORGANIZING AND PLANNING	3
J	PERFORMING GENERAL AIRCRAFT ELECTRICAL MAINTENANCE TASKS	3